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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,600	09/27/2001	Robert Baldemair	032287-020	2781

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EXAMINER
BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/868,600	BALDEMAIR, ROBERT	
	Examiner	Art Unit	
	Kevin M. Burd	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This office action, in response to the amendment filed 7/13/2005, is a final office action.

Response to Arguments

2. The previous objection to the abstract and claims are withdrawn.

3. The previous rejections of the claims under 35 USC 112 are withdrawn.

4. Applicant's arguments filed 7/13/2005 have been fully considered but they are not persuasive. As stated in the previous office action, Bingham (WO 97/40609) discloses a method of transmitting multi-carrier signals in a manner that reduces the power density spectrum of radio frequency emissions in a designated frequency band within the designated transmission bandwidth. Figure 2 shows this power special density. When the power density is reduced, the area under the curve is reduced. By reducing (minimizing) the power density at a designated restricted frequency band, the integral of the power density spectrum is reduced (minimized) over the entire frequency band. The new claims are rejected below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bingham (WO 97/40609) in view of Awater et al (US 6,005,840).

Regarding claim 11, Bingham discloses a method and transmission system for suppressing frequency bands during transmission of data (figures 7-11) in a DMT system (page 7, lines 11-31 and figure 12). DMT systems have a broad frequency band that is divided into a plurality of sub channels having sub carriers assigned thereto and the data to be transmitted are modulated in the transmitter with Inverse Fast Fourier Transform (IFFT) and are demodulated in the receiver with Fast Fourier Transform (FFT) as shown in figure 12. Each sub channel is provided in the spectrum with a major lobe and several side lobes occurring between nearby carriers as shown in figures 3 and 4. Sub carriers within a certain range are given a value of zero for suppressing said range (figures 7-11). A tone is modulated and transmitted for compensating for the side lobes and is used to suppress the transmission power in the restricted frequency band due to side lobe transmissions form at least one of the data sub channels outside the restricted frequency band (page 22, lines 1-13). Figure 2 shows the power special density. When the power density is reduced, the area under the curve is reduced. By reducing (minimizing) the power density at a designated restricted frequency band, the integral of the power density spectrum is reduced (minimized) over the entire frequency band.

Bingham doesn't disclose using an IDFT in the modulator and DFT in the demodulator in the OFDM system. Awater discloses, "The Inverse Fast Fourier Transform (IFFT) is a well known efficient implementation of the IDFT that performs an

N-point IDFT transform" in column 1, lines 36-38. For these reasons, it would have been obvious for one of ordinary skill in the art at the time of the invention incorporate the teachings of Awater into the communication system of Bingham.

Regarding claim 12, a dummy tone is applied using a weighted sum of previous tones (page 9, lines 14-32).

Regarding claims 13 and 14, after the encoded signal has been modulated, a cyclic prefix is appended to the encoded signal (page 19, lines 17-21).

Regarding claim 15, Bingham discloses a method and transmission system for suppressing frequency bands during transmission of data (figures 7-11) in a DMT system (page 7, lines 11-31 and figure 12). DMT systems have a broad frequency band that is divided into a plurality of sub channels having sub carriers assigned thereto and the data to be transmitted are modulated in the transmitter with Inverse Fast Fourier Transform (IFFT) and are demodulated in the receiver with Fast Fourier Transform (FFT) as shown in figure 12. Each sub channel is provided in the spectrum with a major lobe and several side lobes occurring between nearby carriers as shown in figures 3 and 4. Sub carriers within a certain range are given a value of zero for suppressing said range (figures 7-11). A tone is modulated and transmitted for compensating for the side lobes and is used to suppress the transmission power in the restricted frequency band due to side lobe transmissions form at least one of the data sub channels outside the restricted frequency band (page 22, lines 1-13). Figure 2 shows the power special density. When the power density is reduced, the area under the curve is reduced. By

reducing (minimizing) the power density at a designated restricted frequency band, the integral is reduced (minimized) over the transmitted data blocks as well.

Bingham doesn't disclose using an IDFT in the modulator and DFT in the demodulator in the OFDM system. Awater discloses, "The Inverse Fast Fourier Transform (IFFT) is a well known efficient implementation of the IDFT that performs an N-point IDFT transform" in column 1, lines 36-38. For these reasons, it would have been obvious for one of ordinary skill in the art at the time of the invention incorporate the teachings of Awater into the communication system of Bingham.

Regarding claim 16, a dummy tone is applied using a weighted sum of previous tones (page 9, lines 14-32).

Regarding claims 17 and 18, after the encoded signal has been modulated, a cyclic prefix is appended to the encoded signal (page 19, lines 17-21).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Burd
8/11/2005
KEVIN BURD
PRIMARY EXAMINER